adjusting an access tree structure of the memory allocation function based on the memory request.

2.  (Amended)  The method of claim 1, further including forming a plurality of linked-lists referring to memory blocks of a common size.

3.  (Amended)  The method of claim 2, wherein adjusting the access tree structure includes setting a fast access tree to refer to a first of the plurality of linked-lists.

4.  (Amended)  The method of claim 3, further including ensuring that the fast access tree refers to one of the plurality of linked-lists that is most frequently requested.

5.  (Amended)  The method of claim 2, wherein adjusting the access tree structure includes setting a general access tree to refer to a second of the plurality of linked-lists.

7.  (Amended)  A system for allocating memory, comprising:

means for receiving a memory request for a reference to a block of memory;

means for returning the reference to the block of memory to satisfy the request; and

means for adjusting an access tree structure of a memory access function based on the memory request.

8.  (Amended)  A data processing system for providing access to memory, comprising:

a memory including:

an access tree structure;

a program including a memory access function that provides access to the memory and that adjusts the access tree structure according to a memory request for a reference to a block of the memory; and

a processor for executing the program.

9. (Amended) The data processing system of claim 8, further including an operating system with a system memory function, and wherein the memory access function provides access to the memory by utilizing the system memory function.

10. (Amended) The data processing system of claim 8, wherein the access tree structure comprises a fast access tree and wherein the memory access function includes a plurality of linked-lists referred to by the fast access tree.

13. (Amended) The data processing system of claim 8, wherein the access tree structure comprises a general access tree and wherein the memory access function includes a plurality of linked-lists referred to by the general access tree.

17. (Amended) A computer-readable medium including instructions for performing a method for allocating memory by a memory allocation function, the method comprising:

receiving a memory request for a reference to a block of memory;

returning the reference to the block of memory to satisfy the request; and

adjusting an access tree structure of the memory allocation function based on the memory request.

18. (Amended) The computer-readable medium of claim 17, further including instructions for forming a plurality of linked-lists referring to memory blocks of a common size.

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